

1352

ALCO
FIELD BOOK

74

MICROFILMED

DEC 23 1964

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100 00	0 44	100 00	0 87	99 99	1 31	89
1	99 98	1 75	99 98	2 18	99 97	2 62	99 95	3 05	88
2	99 94	3 49	99 92	3 93	99 91	4 36	99 88	4 80	87
3	99 86	5 23	99 84	5 67	99 81	6 10	99 79	6 54	86
4	99 76	6 88	99 73	7 41	99 69	7 85	99 66	8 28	85
5	99 62	8 72	99 58	9 15	99 54	9 58	99 50	10 02	84
6	99 45	10 45	99 41	10 89	99 36	11 32	99 31	11 75	83
7	99 25	12 19	99 20	12 62	99 14	13 05	99 09	13 49	82
8	99 03	13 92	98 97	14 35	98 90	14 78	98 84	15 21	81
9	98 77	15 64	98 70	16 07	98 63	16 50	98 56	16 93	80
10	98 48	17 36	98 40	17 79	98 33	18 22	98 25	18 65	79
11	98 16	19 08	98 08	19 51	97 99	19 94	97 90	20 36	78
12	97 81	20 79	97 72	21 22	97 63	21 64	97 53	22 07	77
13	97 44	22 50	97 34	22 92	97 24	23 34	97 13	23 77	76
14	97 03	24 19	96 92	24 62	96 81	25 04	96 70	25 46	75
15	96 59	25 88	96 48	26 30	96 36	26 72	96 25	27 14	74
16	96 16	27 56	96 00	27 98	95 88	28 40	95 76	28 82	73
17	95 63	29 24	95 50	29 65	95 37	30 07	95 24	30 49	72
18	95 11	30 90	94 97	31 32	94 83	31 73	94 69	32 14	71
19	94 55	32 56	94 41	32 97	94 26	33 38	94 12	33 79	70
20	93 97	34 20	93 82	34 61	93 67	35 02	93 51	35 43	69
21	93 36	35 84	93 20	36 24	93 04	36 65	92 88	37 06	68
22	92 72	37 46	92 55	37 86	92 39	38 27	92 22	38 67	67
23	92 05	39 07	91 88	39 47	91 71	39 87	91 53	40 27	66
24	91 35	40 67	91 18	41 07	91 00	41 47	90 81	41 87	65
25	90 63	42 26	90 45	42 66	90 26	43 05	90 07	43 44	64
26	89 88	43 84	89 69	44 23	89 49	44 62	89 30	45 01	63
27	89 10	45 40	88 90	45 79	88 70	46 17	88 50	46 56	62
28	88 29	46 95	88 09	47 33	87 88	47 72	87 67	48 10	61
29	87 46	48 48	87 25	48 86	87 04	49 24	86 82	49 62	60
30	86 60	50 00	86 38	50 38	86 16	50 75	85 94	51 13	59
31	85 72	51 50	85 49	51 88	85 26	52 25	85 04	52 62	58
32	84 80	52 99	84 57	53 36	84 34	53 73	84 10	54 10	57
33	83 87	54 46	83 63	54 83	83 39	55 19	83 15	55 56	56
34	82 90	55 92	82 66	56 28	82 41	56 64	82 16	57 00	55
35	81 92	57 36	81 66	57 71	81 41	58 07	81 16	58 42	54
36	80 90	58 78	80 64	59 13	80 39	59 48	80 13	59 83	53
37	79 86	60 18	79 60	60 53	79 34	60 88	79 07	61 22	52
38	78 80	61 57	78 53	61 91	78 26	62 25	77 99	62 59	51
39	77 71	62 93	77 44	63 27	77 16	63 61	76 88	63 94	50
40	76 60	64 28	76 32	64 61	76 04	64 94	75 76	65 28	49
41	75 47	65 61	75 18	65 93	74 90	66 26	74 61	66 59	48
42	74 31	66 91	74 02	67 24	73 73	67 56	73 43	67 88	47
43	73 14	68 20	72 84	68 52	72 54	68 84	72 24	69 15	46
44	71 93	69 47	71 63	69 78	71 33	70 09	71 03	70 40	45
45	70 71	70 71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.

marked
20

ENGINEERING DEPARTMENT,
SAN DIEGO,
CITY OF CALIFORNIA.

**6TH ST. EXT. DRAINAGE
SECTION CHANNEL**

MARKET
6-6-29

STA.	ELEVA.	GRADE	CUT OR FILL					AREAS		CUBIC YDS.		REMARKS	
			LEFT	C		RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.			
0700		203.7	$\frac{+130}{18.0}$	$\frac{+47}{50}$	$\frac{+50}{0}$	$\frac{+42}{50}$	$\frac{+37}{8.7}$	103.6					
							1820	30	101.0			208.13 - T from P-31 12.37 - Cuts B+154 196.06 - T.P. 0.21 - 196.27 - T	
+30		201.0	$\frac{+121}{17.1}$	$\frac{+56}{50}$	$\frac{+44}{0}$	$\frac{+42}{2.0}$	$\frac{+20}{5.0}$	$\frac{+16}{6.6}$	78.4				
							1384	20	51.3				
+50		199.0	$\frac{+106}{15.6}$	$\frac{+36}{50}$	$\frac{+28}{30}$	$\frac{+27}{0}$	$\frac{+31}{2.0}$	$\frac{+42}{3.0}$	$\frac{+45}{5.0}$	$\frac{+36}{8.6}$	60.0		
							1493	40	110.7				
+90		196.6	$\frac{+82}{13.2}$	$\frac{+71}{50}$	$\frac{+41}{0}$	$\frac{+43}{50}$	$\frac{+38}{8.8}$	89.3					
							1487	30	82.5				
1+20		194.8	$\frac{+65}{11.5}$	$\frac{+55}{50}$	$\frac{+30}{0}$	$\frac{+30}{50}$	$\frac{+95}{8.5}$	59.4					
							1128	30	62.6				
+50		193.0	$\frac{+15}{6.5}$	$\frac{+30}{50}$	$\frac{+46}{0}$	$\frac{+43}{50}$	$\frac{+40}{9.0}$	53.4					
							1116	30	62.0				
+80		191.2	$\frac{+21}{8.5}$	$\frac{+41}{70}$	$\frac{+40}{50}$	$\frac{+41}{0}$	$\frac{+41}{5.0}$	$\frac{+41}{9.1}$	58.2				
							1213	27	60.7				
2+07		189.5	$\frac{+41}{9.1}$	$\frac{+48}{50}$	$\frac{+42}{0}$	$\frac{+45}{50}$	$\frac{+50}{10.0}$	63.1					
							1147	27	57.3				
+34		188.0	$\frac{+38}{8.8}$	$\frac{+42}{0}$	$\frac{+37}{0}$	$\frac{+34}{5.0}$	$\frac{+36}{8.6}$	51.6					
							1108	27	55.4				
+61		186.3	$\frac{+34}{8.4}$	$\frac{+45}{50}$	$\frac{+42}{0}$	$\frac{+41}{5.0}$	$\frac{+44}{9.4}$	59.2					
							1197	27	59.9				
+88		184.7	$\frac{+35}{8.5}$	$\frac{+44}{50}$	$\frac{+46}{0}$	$\frac{+41}{50}$	$\frac{+38}{5.8}$	60.5					

703.4

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS		CUBIC YDS.		REMARKS
			LEFT		C	RIGHT		EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
2+88													
3+15	183.1		$\frac{+2.0}{7.0}$	$\frac{+2.2}{5.5}$	$\frac{4.2}{9}$	$\frac{+4.1}{0}$	$\frac{+4.1}{5.0}$	$\frac{+4.0}{2.0}$	60.5 115.7	27	57.8		196.7 - T.P.2 12.96 - 183.31 - T.P. 2.82 - 186.13 - T 12.83 - 173.30 - T.P. 0.02 + Ad 173.33 = T
42	181.5		$\frac{+2.0}{7.0}$	$\frac{+2.6}{5.0}$	$\frac{+3.4}{0}$	$\frac{+3.5}{5.0}$	$\frac{+3.8}{8.8}$		99.2	27	49.6		
+69	179.8		$\frac{+1.7}{7.7}$	$\frac{+2.5}{5.0}$	$\frac{+1.9}{0}$	$\frac{+2.8}{5.0}$	$\frac{+2.9}{7.9}$		44.0	27	37.1		
+96	178.2		$\frac{+5.3}{10.2}$	$\frac{+3.8}{5.0}$	$\frac{+2.6}{0}$	$\frac{+2.7}{5.0}$	$\frac{+3.2}{8.2}$		74.2	27	30.2		
4+23	176.6		$\frac{+6.3}{11.3}$	$\frac{5.0}{5.0}$	$\frac{+4.6}{0}$	$\frac{+3.0}{5.0}$	$\frac{+2.6}{7.6}$		73.8	27	36.9		
+50	175.0		$\frac{+9.2}{14.2}$	$\frac{+4.0}{5.0}$	$\frac{+3.1}{0}$	$\frac{+3.0}{5.0}$	$\frac{+3.9}{8.9}$		43.6	27	53.7		
+77	173.4		$\frac{+1.7}{2.4}$	$\frac{+4.3}{5.0}$	$\frac{+2.8}{0}$	$\frac{+2.7}{5.0}$	$\frac{+2.4}{7.4}$		63.8	27	60.6		
5+04	171.7		$\frac{+4.0}{19.0}$	$\frac{+7.1}{5.0}$	$\frac{+5.3}{0}$	$\frac{+4.2}{5.0}$	$\frac{+3.0}{8.0}$		121.1	27	64.7		
+31	170.1		$\frac{+1.7}{17.7}$	$\frac{+8.3}{5.0}$	$\frac{+7.0}{0}$	$\frac{+5.6}{5.0}$	$\frac{+5.0}{8.0}$	$\frac{+2.0}{7.0}$	57.3	27	91.4		
+58	168.5		$\frac{+0.7}{15.7}$	$\frac{+7.5}{5.0}$	$\frac{+6.1}{0}$	$\frac{+5.1}{5.0}$	$\frac{+4.1}{9.1}$		129.4	27	64.7		
+85	166.9		$\frac{+1.8}{17.8}$	$\frac{+7.4}{5.0}$	$\frac{+5.8}{0}$	$\frac{+4.8}{5.0}$	$\frac{+4.1}{9.1}$		72.1	27	91.4		
									110.8	27	124.3		
									248.7	27	124.3		
									137.9	27	137.8		
									275.5	27	137.8		
									137.6	27	127.1		
									254.2	27	127.1		
									116.6				841.0

SECTION

4

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS		CUBIC YDS.		REMARKS
			LEFT	C		RIGHT		EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
5+85													
6+12	165.3		+152 802	+8.5 50	+7.0 0	+5.7 50	+4.0 50	116.6 263.1	27	131.5		173.33 = T.P. 3 12.93 - 100.40 = T.P. 132.7 161.92 = T 3.01	
+39	163.6		+11.9 16.9	+2.0 5.0	+8.6 0	+5.7 5.0	+6.5 11.5	155.2	27	150.9		158.91 158.87 = B.M. 0.04 = Error.	
+50 = Bk	163.0		+10.9 15.9	+2.0 5.0	+8.6 0	+7.6 5.0	+6.5 11.5	161.5	18	111.8		158.87 = B.M. 2.33 - 161.20 = T	
+68 = E.C.	161.8		+13.2 18.2	+9.5 5.0	+8.5 0	+7.5 5.0	+7.0 12.0	173.9	32	189.0			
7+00	159.6		+16.4 51.4	+8.0 5.0	+6.4 0	+5.5 5.0	+4.8 9.8	144.5	66	231.5			
+66	155.1		+9.2 14.2	+4.0 5.0	+3.1 0	+1.8 5.0	+1.7 14.7	44.9	10	201.8			
8+14	151.9		+13.0 18.0	+10.6 5.0	+9.5 0	+7.7 5.0	+5.2 10.2	182.2	13	77.8			
+27	151.0		+12.9 17.9	+13.6 16.0	+11.9 5.0	+10.2 0	+7.8 5.0	+6.0 11.0	2	19.8			
+31	150.7		+9.0 14.0	+7.3 3.0	+6.4 0	+7.6 5.0	+6.4 11.4	126.5	11	50.3			
+42	150.0		+8.7 13.7	+8.0 5.0	+7.0 0	+6.1 5.0	+5.0 10.0	120.3	10	61.1			
+52	149.2		+13.8 18.8	+11.8 5.0	+9.9 0	+9.2 5.0	+7.8 12.8	209.9				120.1	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL					AREAS		CUBIC YDS.		REMARKS
			LEFT	C		RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
8+52												
8+69		148.1	$\frac{+145}{125}$	$\frac{+114}{50}$	$\frac{+108}{0}$	$\frac{+100}{50}$	$\frac{+83}{13.3}$	209.7 491.7 231.8	17	139.0		
+80 = Intersection with Branch channel to North		147.4	$\frac{+154}{209}$	$\frac{+103}{50}$	$\frac{+99}{0}$	$\frac{+74}{50}$	$\frac{+78}{12.8}$	214.8 352.7	25	163.3		161.0 = T.P. 4 125.5 - 148.65 = T.P. 81.2 - 148.78 = T.P. 12.82 - 135.95 = T.P. 0.10 136.05 = T
9+05		145.7	$\frac{+85}{135}$	$\frac{+64}{50}$	$\frac{+56}{0}$	$\frac{+51}{50}$	$\frac{+47}{27}$	137.9 202.0	21	78.5		
+26		144.3	$\frac{+69}{119}$	$\frac{+50}{50}$	$\frac{+43}{0}$	$\frac{+33}{50}$	$\frac{+28}{7.8}$	64.1 94.5	32	56.0		
+58		142.0	$\frac{+31}{8.1}$	$\frac{+27}{50}$	$\frac{+25}{0}$	$\frac{+20}{50}$	$\frac{+20}{7.0}$	30.4 69.7	32	41.3		
+90		139.9	$\frac{+4.7}{9.7}$	$\frac{+39}{50}$	$\frac{+30}{0}$	$\frac{+17}{50}$	$\frac{+14}{6.4}$	39.3 82.8	30	46.0		
10+20		137.9	$\frac{+35}{8.5}$	$\frac{+33}{50}$	$\frac{+33}{0}$	$\frac{+33}{50}$	$\frac{+2.9}{7.9}$	43.5 84.5	30	46.9		
+50		135.9	$\frac{+34}{8.4}$	$\frac{+34}{50}$	$\frac{+32}{0}$	$\frac{+2.9}{50}$	$\frac{+2.4}{7.4}$	41.0 64.8	30	36.0		
+80		133.9	$\frac{22}{7.2}$	$\frac{22}{50}$	$\frac{+32}{0}$	$\frac{+14}{50}$	$\frac{+19}{6.9}$	23.8 43.0	30	23.9		
11+10		131.9	$\frac{+16}{6.6}$	$\frac{+16}{50}$	$\frac{+13}{0}$	$\frac{+19}{50}$	$\frac{+2.8}{7.8}$	19.2 43.0	40	31.8		
+50 = Bk.		129.0	$\frac{+2.9}{7.9}$	$\frac{+2.5}{50}$	$\frac{+1.9}{0}$	$\frac{+1.7}{50}$	$\frac{+1.4}{6.4}$	23.8				745.4

SECTION

6

STA.	ELEVA.	GRADE	CUT OR FILL					AREAS		CUBIC YDS		REMARKS
			LEFT	C			RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
11+50												
11+69 = P.C.	127.7		+5.5 105	+4.1 50	+3.4 50	+2.7 50	+2.3 7.3	23.8 72.2 48.4	19	17.0		136.05 = T 13.00 - 123.05 = TP 0.207 123.25 = T
12+00	125.8		+3.6 8.6	+3.3 50	+3.0 0	+3.1 50	+3.4 3.4	42.2 86.7	27	43.4		
+87	124.1		+3.7 8.7	+3.6 50	+3.4 0	+3.0 50	+2.9 7.9	44.5 95.1	27	22.2		
+54	122.3		+3.6 8.6	+4.1 50	+3.8 0	+3.4 50	+3.2 3.2	50.6 99.4	27	49.7		
12+81	120.6		+4.1 5.1	+4.1 5.0	+3.9 0	+3.9 50	+2.3 7.3	48.8 80.1	27	40.1		
13+18	118.9		+3.6 8.6	+3.1 50	+2.2 0	+2.0 50	+2.1 7.1	31.3 77.2	27	38.6		
+35	117.1		+5.3 10.3	+4.6 50	+2.5 0	+2.6 50	+2.5 7.5	45.9 120.7	17	38.0		
+52	116.0		+7.5 12.5	+6.2 50	+5.8 0	+2.0 50	+2.0 7.0	74.8 126.4	10	23.4		
+62	115.4		+6.6 11.6	+5.2 50	+2.9 0	+2.0 50	+2.0 7.0	51.6 130.6	27	65.3		
+89	113.7		+6.9 11.9	+6.4 50	+5.3 0	+3.5 50	+3.2 3.2	79.0 142.2	27	71.1		
14+16	112.0		+4.2 7.2	+4.3 50	+4.4 0	+4.5 50	+4.5 9.5	63.2				463.9

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL					AREAS		CUBIC YDS.		REMARKS
			LEFT	C		RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
14+14												
4+43	110.3		+42 32	4.1 5.0	+42 0	+43 5.0	+42 32	65.2 122.8	27	29.8	153.25 = T-P.6 12.92 -	
+70	108.5		+43 33	4.0 3.0	+3.9 0	+3.5 3.0	+3.5 3.3	53.0 105.0	27	56.3	110.33 = TP 1.12 +	
+97	106.8		+46 36	+42 5.0	+34 0	+33 5.0	+4.0 3.0	52.0 102.6	10	34.2	111.52 = T 12.87 -	
15+15	105.7		+45 35	+36 5.0	+32 0	+3.8 5.0	+4.2 3.2	50.6 52.2	9	9.4	98.65 = TP 0.58 +	
+24	105.1		+10 6.0	+0.5 5.0	+0.3 0	+0.9 5.0	+0.8 5.8	5.6 20.7	27	10.4		
15+51	103.3		+12 6.2	+0.9 5.0	+1.3 0	+1.7 5.0	+1.8 6.8	15.1 25.1	27	12.5		
+78	101.6		+0.8 5.8	+0.9 5.0	+0.1 0	+1.4 5.0	+1.6 6.6	10.0 21.9	27	11.0		
16+05	99.9		+1.0 6.0	+1.0 5.0	+1.1 0	+1.2 5.0	+0.7 5.7	11.9 23.2	27	11.6		
+32	98.1		+0.5 5.5	+0.5 5.0	+0.8 0	+1.7 5.0	+1.7 6.7	11.3 20.2	29	10.8		
16+61 = EC.	96.3		+1.2 6.2	+1.1 5.0	+0.5 0	+1.8 5.0	+1.0 6.0	9.9 24.0	39	17.3		
17+00	93.8		+2.2 7.2	+1.8 5.0	+1.7 0	+0.9 5.0	+0.8 5.8	15.1			255.8	

SECTION

8

S	STA.	ELEVA.	GRADE	CUT OR FILL					AREAS		CUBIC YDS.		REMARKS
				LEFT	C			RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
14+	17+00												
14+	17+50	90.6		$\frac{+23}{7.3}$	$\frac{+20}{50}$	$\frac{+20}{0}$	$\frac{+22}{50}$	$\frac{+20}{7.0}$	25.0	50	37.1	9923-X 1289-	
									520	30	28.9	8634-TP 0.99+	
17	+80	88.7		$\frac{+25}{7.5}$	$\frac{+20}{50}$	$\frac{+24}{0}$	$\frac{+21}{50}$	$\frac{+24}{7.4}$	27.0	20	28.3	8733-X 1281-	
									764			7452-TP 2127	
19	18+00	87.4		$\frac{+4.7}{9.7}$	$\frac{+4.3}{50}$	$\frac{+3.5}{0}$	$\frac{+2.7}{50}$	$\frac{+3.2}{8.2}$	49.4	50	107.0	7524-X	
15+	+50	84.2 3.2		$\frac{+4.8}{9.8}$	$\frac{+4.6}{50}$	$\frac{+4.5}{0}$	$\frac{+4.5}{50}$	$\frac{+4.4}{9.4}$	66.2	50	114.0		
									1232				
15	19+00	81.0		$\frac{+4.4}{9.4}$	$\frac{+4.6}{50}$	$\frac{+5.1}{0}$	$\frac{+2.7}{50}$	$\frac{+2.3}{7.3}$	57.0	11	39.5		
									1254				
15+	+17	79.9		$\frac{+4.7}{9.7}$	$\frac{4.4}{50}$	$\frac{+5.0}{0}$	$\frac{+4.6}{50}$	$\frac{+4.6}{7.6}$	68.4	53	86.7		
									141.9				
+	+50	77.8 3.2		$\frac{5.0}{10.0}$	$\frac{5.0}{50}$	$\frac{+5.1}{0}$	$\frac{+4.8}{50}$	$\frac{+4.6}{2.6}$	73.5	50	118.0		
									1273				
16+	20+00	74.6 3.2		$\frac{4.6}{9.6}$	$\frac{+2.6}{50}$	$\frac{+4.4}{0}$	$\frac{+4.3}{50}$	$\frac{+4.0}{2.0}$	53.8	35	60.8		
									929				
+	+35	72.4		$\frac{+4.0}{9.0}$	$\frac{+3.0}{50}$	$\frac{+2.4}{0}$	$\frac{+3.4}{50}$	$\frac{+3.6}{8.6}$	40.1	45	84.0		
									698				
16+	21+00	68.2		$\frac{2.2}{7.2}$	$\frac{+2.2}{50}$	$\frac{+2.2}{0}$	$\frac{+2.7}{50}$	$\frac{+3.0}{8.0}$	29.7	50	78.7		
									850				
17+	+50	65.0		$\frac{+3.8}{9.8}$	$\frac{+3.8}{50}$	$\frac{+4.2}{0}$	$\frac{+4.0}{50}$	$\frac{+3.8}{8.8}$	55.3		783.0		

SECTION

9

S	STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
				LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
14+	21+50										
14+	22+00	61.8		1.5 4.5	1.7 5.0	1.3 8.0	1.4 5.4	55.3 118.9 63.6	110.0		752.4 = π 67.4
+7	+70	57.3		1.3 8.8	1.9 5.0	1.9 0	1.6 5.0 1.3 8.0	128.1 64.5	166.0		44. and 54. 97400 Season Elev. Sub = 68.4 J = Error.
+9	+78	56.8		1.0 5.0	1.4 5.0	1.1 0	1.9 5.0 1.9 6.9	77.6 13.1	11.5		
15+											
Additional Notes: For BRANCH LINE											
to MAIN CHANNEL											
BRANCH # 1											
15+	1/2 Main Channel 0+00	81.80	GRADE					Assumed 209.2			
+1	+35	155.6		1.5 7.5	1.9 5.0	1.9 0	1.0 5.0 1.6 8.1	418.4 209.2	193.6		
16+	+55			1.8 10.0	1.6 5.0	1.7 0	1.7 5.0 1.9 8.9	353.2 144.0	130.8		
+1	+71 = End			1.0 7.0	1.6 5.0	1.2 0	1.8 5.0 1.1 7.1	185.0 41.0	54.8		
16+											
Note: for Branch # 2 See P-10											
17+											

5,364.1 cy. main Channel

379.2 c.y. Branch #1

OVER

East Terry Pines Grade Deline
Grades 392+79.76 to 486+81.50

SECTION

SECTION

Sisson
McClurg
Toad
Hartman

12

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS	CUBIC YDS.		REMARKS
			LEFT	C	RIGHT		EXCAV.	EMBANK.	
14+						EXCAVATION Right Grade	EMBANKMENT D of I		October 9-1930
14+40	+50	402.66	402.28	7.7 2.7 2.5 31.0	8.6 2.0 7.7	7.1 2.1 0.0 35.0	404.28	1°52'09"	BM 417.75 Hail Pole 80 ft 393.76 2.64 431.77 ft 12.50 409.29 2.07 411.36 ft
14+50	+50	405.98	405.10	5.4 7.6 7.2 31.3	5.76 7.89 ft	4.8 7.0 7.53	406.6°	7°49'27"	
15+	+50	406.93	407.93	11.4 11.0 10.0 35.0	3.43 2.93 ft	13.8 7.0 35.8	408.93	8°46'14"	417.75 Hail Pole 4.36 80 ft 393.76 422.11
15+10	394+0	409.25	410.25	12.5 11.9 10.7 35.4	11.54 10.0 7.67 ft	10.5 10.0 7.05 35.3	411.25	9°44'08"	BM 417.75 2.64 418.40 ft 12.01 406.39 0.96 407.35 ft
15+20	+50	411.60	412.58	10.7 9.7 7.1 35.6	9.21 9.19 ft	8.2 7.8 7.5 35.8	413.50	10°41'20"	
16+	393+0	414.02	414.90	7.8 7.5 7.2 35.6	6.99 6.90 ft	6.6 6.2 7.2 35.6	415.55	11°38'38"	
16+50	392+79.76	415.01	415.82	6.5 5.5 7.0 35.5	5.95 5.81 ft	5.8 4.3 7.5 35.8	416.34	13°01'50"	
17+	Beginning of layout								

Note This Curve Backed in from E.C.

East Torrey Pines Grade
SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
14+										
14+	399+09.15									
14+	399+0	386.15	387.00	143 87 56 7.2 28.1	134 70 64	128 58 70 +78 285	387.60	0° 11' 05"		111.34 T B Ford 13.96 398.20 398.64 400.44 9.09 391.35 388 373.57 A
14+	750	388.36	389.33	136 +5.5 298	66 52	123 25 278	390.23	1° 08' 23"		
15+	398+0	390.65	391.65	98 +38 269	88 78	78 37 269	392.65	2° 05' 41"		
15+	750	392.98	393.98	74 57 124 267	64 50	54 30 24 263	394.98	3° 02' 58"		407.35 T B Ford 11.12 395.73
16+	397+0	395.30	396.30	56 102 46 205	41 33 70.8	31 100 710 287 285	397.30	4° 00' 16"		
16+	750	397.63	398.63	137 118 19 36.0 on 120	18 12 01	08 20 70.3 25.2	399.63	4° 57' 34"		
17+	396+0	399.95	400.95	114 97 17.9 on 120 259	104 91 70.3	91 71 0.0 250	401.95	5° 54' 51"		

Left Grade L

Right Grade Defl

-46.5

East Torrey Pines Grade
SECTION

BM 275.29 B.P. 06/10/14
10/1/50

14

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Li H Grade 2								
+50	371.69	370.69	-0.2 1.0 0.8 2.0	-1.25 1.0 -2.15	-1.5 1.0 -2.3		371.69			393.57 A 1.57 BM 392.01 401.25 392.06
102+0	374.05	373.05	H.L. -4.0 34.0	3.4 1.0 2.3	1.6 1.7 80.6		374.05			381.18 A 12.13 36.87 36.90 36.57 A 12.61 17.357 1.17 358.18 A
+50	374.87	375.3	Grade Red off 30.7 18.7 11.0 8.5	20.2 19.0 1.2	18.7 9.8 30.9	30.7 30.7 +2.2 20.5	374.87			357.41 A B Back
401+0	377.20	377.70	16.4 7.2 17.2 89.6	15.2 11.7	16.4 3.4 113.0 81.5		377.20			
400+50	379.52	380.02	16.0 13.7 2.3 39.4	13.5 19.5	14.0 1.3 30.9		379.55			
400+0	381.80	382.35	18.6 13.4 5.2 29.1	18.1 9.1 19.0	18.4 8.1 110.3 30.2		382.05			
399+50	384.00	384.68	16.4 8.3 7.7 28.9	15.7 17.9	15.6 10.9 12.7 29.6		384.75			

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
10670	351.25	351.75	26.9 18.7 34.8	26.1 26.0 17.9	26.9 18.7 34.0	6.4 6.2 58.0	351.25	350.92	258.18		3811.0 T Ford 12.7 on 2.0 to 6 4057.50 373.76 378.17
+50	354.21	354.71	26.9 18.7 34.8	26.1 26.3 17.9	26.9 18.7 33.2	3.4 6.0 47.7	354.21	354.00	359.77		
10570	357.08	357.58	24.0 16.1 33.6	23.5 16.7	24.0 16.5 31.8	1.6 1.5 47.8	357.08	356.88	373.72		373.72 373.72 Dry Light Grades Jan 7-31
+50	359.87	360.37	21.3 13.2 33.0	20.8 13.4	21.4 13.6 31.8	8.7 8.7 33.4	359.87	359.76			3811.0 T Ford 12.7 368.33 368.43 356.93 359.41 T Ford
10470	362.58	363.08	18.5 7.1 30.4	18.0 11.0	17.0 5.3 11.7 25.9	5.9 5.9 6.0 27.6	362.58	362.54			
+85		363.85				5.1 25.0					
+50	365.20	365.70	16.0 7.5 39.8	15.5 7.6	18.7 13.6 75.6		365.20				
10370	367.73	368.23	12.2 5.3 29.1	1.4 3.8 2.4	2.3 17.0 38.6 8.5		367.73				

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT		EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
150	330.25	330.75	+26.3 17.3 29.3	156 1.4 79.2	161 89 7.2 28.6	101 101 00 108.0	330.25	329.42	346.221	378.17	81 Ford 12.3 36.58 1.9 17.6 367.5 147.5 256.07 8.57 356.58
109+0	333.25	333.75	+31.5 13.4 30.1	126 3.4 79.1	131 89 7.2 29.0	72 72 00 182.0	333.25	331.68			
750	336.25	336.75	+31.5 13.4 30.8	91.9 11.7	91.5 10.3 10.7 32.4	113 10.3 0.0 119.0	336.25	335.21			357.01
408+0	339.25	339.75	+28.5 3.2 12.7 31.2	78.0 50.0 73.0	86.5 7.5 13.0 30.3	91 91 00 112.0	339.25	338.38			357.01 138 351.03 6.23 357.01 7.17 77349.99 349.99 31.5 353.14 11.04 342.10 347.56 12.12 335.14 7.12 337.56
750	342.25	342.75	+35.2 11.6 11.6 31.6	55.1 15.1	55.9 10.3 13.5 31.4	116 116 00 101.0	342.25	341.50			337.56
407+0	345.25	345.75	+32.9 3.1 13.5 30.9	32.4 8.9 12.2	32.9 3.1 12.2 30.1	125 125 00 58.0	345.25	344.92			
406+50	348.25	348.75	+29.9 3.7 12.3 30.3	12.4 1.8 18.1	22.0 3.7 12.2 30.5	95 95 00 64.0	348.25	347.86			

East Torrey Pine Grade

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL						
			LEFT	C	RIGHT				
1150	312.95	312.75	12.6 17.9 31.5	33.6 5.3 28.3	33.8 13.3 20.5 36.3	16.1 11.1 5.0 88.0			
112+0	315.95	315.75	10.6 11.6 19.8 32.3	30.6 9.2 21.4	30.8 12.4 18.4 34.2	13.0 12.0 5.0 87.0			
1150	318.95	318.75	17.6 11.2 31.6	27.6 8.4 19.2	27.8 12.3 15.5 32.5	12.3 12.3 0.0 28.0			
111+0	321.35	321.75	34.7 7.8 27.5 31.9	24.6 8.8 15.8	24.8 15.2 9.2 29.6	8.1 9.2 0.0 54.0			
118+0	323.00	323.00	33.6 3.6 27.0 31.5	22.3 10.0 12.3	23.6 10.5 13.1 27.6	7.8 2.8 10.0 70.0			
1150	322.60	324.75	31.9 3.9 28.0 30.2	21.6 8.7 12.9	21.2 14.4 6.8 27.4	6.1 6.1 0.0 37.0			
110+0	327.35	327.75	29.2 1.8 19.6 38.1	18.6 8.6 10.0	19.0 1.9 17.1 28.1	16.6 12.6 5.0 76.0			

Left Grade

Slope

Slope

Slope

BM 33006 Stn 6
RI 122+50 8594 Def 1 P.A.
BM 32171 2006/2/11
410+50 m/h

AREAS	CUBIC YDS.	REMARKS					
			EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
312.55	2' 27" 07"	312.05					346.37 344.37 344.37 344.37
315.55	1' 44" 09"	315.05					351.50 344.68 346.37 344.37
318.55	1' 01" 11"	318.20					339.51 327.53 327.89 330.21 322.60 317.82 310.29 327.11 322.73 315.58 316.41
321.50	0' 18" 13"	321.27					316.41
322.72		322.57					
324.40		324.28					
327.35		327.94					

Right Grade

Slope

Slope

50' Left

51.25

51.93

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT		EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
416+0	291.95	291.75	58.7 15.5 38.6	58.9 15.3 +13.6	371 192 178 340	5.5 5.5 6.0 52.0	291.55	7° 27' 53"	291.33	BM 2 344.32 341.50 342.75 323.62 338.97 188.6 326.77 321.53 388.64 Ford	BM 2 344.32 341.50 342.75 323.62 338.97 188.6 326.77 321.53 388.64 Ford
+50	294.95	294.75	55.7 37 +52.0 38.0	58.3 14.1 +13.4	341 116 +227 307	26 26 26 536	294.55	6° 44' 55"	294.32	19' 38" C-2333	Doyle Grade Jan 22-31 414.50
+29.20 = 2	Curve 296.82	296.72									
415+0	297.95	297.75	55.4 18.7 +19.5 37.4	55.3 18.7 +17.6	311 120 +187 341	118 118 60 65.0	297.55	6° 01' 57"	297.23	23' 25" C-2792	316.41 Ford 13.05 # 303.36 5.14 309.00 12.93 296.87 296.82
+50	300.95	300.75	52.1 12.3 +14.8 36.2	52.3 12.0 +13.3	281 112 +139 320	27 87 10 53.0	300.55	5° 18' 59"	300.23	12' 83" Ford # 287.06 285.78 12.78 273.00 271.08	
414+0	303.95	303.75	49.6 12.3 +12.9 35.6	49.3 12.0 +13.4	251 116 +135 318	131 131 20 50.0	303.55	4° 36' 01"	303.35	274.08	
+50	306.95	306.75	46.1 12.3 +38.8 34.7	46.3 12.0 +11.7	221 116 +107 354	101 101 20 55.0	306.55	3° 53' 03"	306.31		
413+0	309.95	309.75	43.1 12.3 +31.5 33.1	43.3 12.0 +11.7	191 116 +105 303	70 70 20 46.0	309.55	3° 10' 05"	309.38		

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS	CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION		EMBANKMENT	EXCAV.	
			Left Grade 2							
+50	270.92	270.75	52.2 17.5 10.8 35.2	33.6 17.5 13.7	21.0 16.1 16.9 28.5	8.6 3.6 0.0 41.0	1/2 270.58	12° 28' 39"	315.68 315.76 315.76	345.31 345.7 BM 340.67 - 340.65 350.15 352 TP=345.13 on spot 5/21/30
+25	272.45	272.25	46.1 13.0 38.7							
419+0	273.95	273.75	17.6 HL + 17 30.3 31.6	33.6 27.9 +13.7 31.8	19.0 14.1 13.8 26.9	11.1 11.1 0.0 50.0	1/2 273.55	11° 45' 41"	304.31 18.8 293.33	345.21 12.6 332.63 332.79 12.4 321.78 321.07 323.35 Ford
+75	275.45	275.25								
+50	276.95	276.75	46.3 16.3 35.1	36.6 HL + 34.6	39.2 27 13.8 38.0	9.8 9.7 0.0 100.0	1/2 276.55	11° 02' 43"	344.53 13.6 330.93 12.9 327.93 330.93 12.9 318.08 12.1 319.19	275.95
+25	278.45	278.25								
418+0	279.95	279.75	70.7 12.5 +66.2 71.6	65.5 2.9 +60.7	49.1 50 41.1 35.3	7.3 7.6 0.0 145.0	1/2 279.55	10° 19' 45"		BM 340.65 11.7 343.39 12.5 329.89 13.0 317.91 1.0 318.99 11.7 307.28 10.2 307.54 12.6 294.85 275.39 12.6 283.73 10.2 283.81 12.9 270.27 10.3 270.30 270.32
+50	282.95	282.75	67.7 12.8 +64.3 41.1	65.9 2.8 +63.3	53.9 52 12.8 33.0	15.4 15.2 0.0 128.0	1/2 282.55	9° 36' 47"		281.73
417+0	285.95	285.75	64.8 12.6 +52.9 70.0	42.9 12.6 +30.3	30.2 10.2 19.8 34.9	11.7 11.9 0.0 57.8	1/2 285.55	8° 53' 49"		285.29
416+50	288.95	288.75	61.7 12.0 +56.7 39.2	39.9 2.0 +37.9	37.4 10.6 13.6 31.8	8.6 8.6 0.0 54.5	1/2 288.55	8° 10' 51"		288.31 BM 261.78 on 12/11/30 419.15/30

East Terry Pinn Grade

SECTION

Note For Shrinkage Grains 2.5% to 3.0% See Page 67

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
+32		230.43			1.0 Temp. Rd 2.0 2.50
426+0	232.13	231.75	-27.9 -37.6 84.4	-32.2 8.3 1.37	20.1 13.6 7.5 26.6
+75		233.25			2.0 2.50
+50	235.13	234.75	-7.0 -24.0 -31.0 74.5	-1.6 -18.0	2.7 13.5 -1.8 44.2
425+0	236.75	237.75	3.3 0.6 +3.7 2.67	2.3 13.4 -1.1	1.3 11.6 1.0 3.57 17.90
+70					1.0 Temp. Rd
+50	239.75	240.75	9.8 +1.7 3.99	4.8 1.8 +3.5	3.6 7.0 1.0 +1.3 3.81 20.0 1.0 Temp. Rd
+10					1.0 Temp. Rd
424+0	242.75	243.75	11.4 5.1 +4.3 3.53	6.8 1.3 +5.5	6.8 1.4 +5.4 3.9 24.0
+50	245.75	246.75	8.5 1.7 +1.7 4.9	9.7 1.0 +8.7	9.7 1.0 +8.6 1.57 24.0
423+0	248.75	249.75	5.5 1.5 +1.0 4.53	8.2 6.5 +8.7	8.2 1.5 +6.6 2.4 24.0

1.1459 Part
BN 234.568
BN 277.53
BN 226.36
BN 203.58 Lt 183.75
BN 253.47

AREAS	CUBIC YDS.	REMARKS	
			EXCAVATION
Right Grader 5 ft			
232.75	7° 38' 22"	236.25	
234.25			
235.75	6° 41' 04"		
238.75	5° 43' 46"	246.45	
241.75	4° 46' 29"	250.60	
243.75	2° 00' 38"		
244.75	3° 49' 11"	255.55	
247.75	2° 51' 53"	258.65	
250.75	1° 54' 36"	261.65	

20420 T
237.99 T 81 Ford
12.36
235.49
276.16 T
12.96
213.86
213.31
213.57 T
12.52
301.05
0.12
301.17 T
12.50
288.67
0.62
289.19 T
289.94
276.25
1.75
278.00 T
212.72
265.28
265.38
266.16 T
265.58 T
8.96
257.60
257.38
257.58 T
257.88 T
254.35
240.01
0.08
240.09 T
260.13
242.33
247.76
237.76
238.13 T Ford

East Torrey Pine Grade

SECTION

B.M. 151 152
165.80
165.50
B.M. = 165.50
Set at 431+75

251.69 ft
248.314

22

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade								
+50	211.13	210.75	-55.8 -62.2 -72.8	-55.4 -61.8 -69.7	-58.0 -64.2 -72.3	213.37	14° 19' 25"			238.12 ft 16.21 21.58 1.40 21.68 12.88 203.88 204.30 ft 12.73 191.25 12.00 191.32 ft 12.00 179.30 179.37 ft 3.37
429+0	214.13	213.75	-58.8 -67.4 -73.1	-58.4 -65.3	-48.7 -55.1 -61.7	216.37	13° 22' 08"	167.26 3.12 164.32		204.30 ft 12.73 191.25 12.00 191.32 ft 12.00 179.30 179.37 ft 3.37
+638°	Center of Curve						12° 40' 40"			
+50	217.13	216.75	-12.4 -12.2 -11.6 -10.4	-12.0 -12.2 -15.2	-51.7 -55.2 -61.8	219.37	12° 24' 50"	155.37 2.56 152.81		184.67 ft 3.37 179.30 11.12 185.22 ft 12.72 167.01 177.74 ft 12.00 155.21 0.16 155.37 ft
428+0	220.13	219.75	-52.4 -60.2 -71.9	-52.0 -62.0	-41.9 -52.8 -60.8	222.37	11° 27' 32"	16452.8 33772.4 ft		
+50	223.13	222.75	-42.5 -48.2 -55.2 -71.0	-42.1 -52.1	-44.7 -53.5 -61.4 -70.6	225.37	10° 30' 15"			
427+0	226.13	225.75	-43.5 -51.8 -62.2 -72.0	-43.3 -53.3	-24.3 -30.3 -37.5 -47.8	228.37	9° 32' 57"			
426+50	229.13	228.75	-24.9 -35.5 -40.4 -58.6	-24.3 -31.9	-14.7 -20.8 -27.6 -37.4	231.37	8° 35' 39"			208 58.6 17.00

East Torrey Piney Grade

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
		Left Grade 2			
433+0	190.13	189.75	-9.5 11.0 13.5 18.3	-21.1 11.3 32.7	-48.6 25 51.1 104.1
+50	193.13	192.75	-12.5 8.2 20.8 59.4	-24.4 11.3 35.7	-63.5 14.3 77.8 144.7
+25					
432+0	196.13	195.75	-3.8 1.3 29.1 71.7	-37.4 11.0 38.4	-66.5 12.1 83.6 158.4
+50	199.13	198.75	-13.8 0.9 44.5 94.8	-13.1 11.0 55.3	-69.5 12.9 88.7 157.1
431+0	202.13	201.75	-4.8 4.2 57.2 104.8	-58.4 8.5 67.7	-72.5 15.0 77.5 144.3
+50	205.13	204.75	-49.8 17.2 57.2 104.8	-61.4 11.0 71.3	-61.0 15.7 69.7 138.6
430+0	208.13	207.75	-53.6 8.5 57.6 111.4	-64.4 11.0 79.3	-55.0 12.0 65.0 135.5

BM 191.07 B.P. Calculat
432+75 only
Oct 21-30
BM 186.10
23

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
	Right Grade 2 of 1			
192.37	21° 00' 29"			155.37 T 12.63 142.74 0.66 143.40 T 12.61 139.79 131.82 T 0.81 131.62 12.17 123.70 T 0.55 143.24 12.63 158.27 T 15.26 12.87 168.33 T 0.10 128.23 12.21 180.64 T
195.37	20° 03' 11"	180.64		BM 177.18 3.46 RM 11.0 51.2 432+10 177.18
	19° 34' 35"			
198.37	19° 05' 54"			
201.37	18° 08' 36"			
204.37	17° 11' 18"			
207.37	16° 14' 01"			
210.37	15° 16' 43"			

East Torrey Pine Grade

SECTION

Oct 22-30 24

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
136+0 1/2	171.15	171.75	37.2 10.9 +26.3 31.6	36.6 12.8 +23.8	36.8 19.2 +17.4 39.9	7 1/2	171.58			180.64 T of Fard 0.30 180.34 12.55 192.93 T 0.29 192.64 12.54 205.18 T 0.19 205.07 3.32 208.39 T Fard
+50 1/2	173.99	174.75	34.2 +28.8 32.2	33.6 +25.6	33.1 +27.5 31.1	7 1/2	175.03			
+27 1/2	175.26	176.09	33.1 +30.4 32.6	32.3 +25.7	31.8 +25.3 31.3		176.59	25° 21' 20"		
										31.38"
135+0 1/4	176.85	177.75	31.5 +29.3 32.3	30.4 +25.1	29.9 +28.5 30.6	7 1/2	178.45	24° 49' 41"		
175	178.31						180.10			
+50 1/4	179.97	180.75	25.4 +22.4 31.1	24.1 +17.6	23.4 +22.5 31.3	7 1/2	181.75	23° 52' 23"		
135	181.26						183.25			
134+0 1/2	182.75	183.75	+22.4 10.4 +13.0 31.6	+19.2 10.4 +8.8	+16.6 7.2 +9.4 28.9	7 1/2	184.75	22° 55' 05"		
							7 1/2	186.37		
133+50	187.13	186.75	-1.5 -6.0 -6.5 37.8	-3.1 -13.2	-8.6 -25.3 -26.0		189.37	21° 57' 17"		

Left Grade 2

Def 1

20.5

East Torrey Pinch Grade

SECTION

B.M. 166.32 B.P. Calolet
437+12 Left

B.M. 168.87 Hub
at 437+0.

25

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
450	151.75	150.75	-4.9 6.9 -11.2 25.6	-15.8 9.5 -25.3	-27.7 26.5 -46.2 97.3		151.75			208.89 T & Ford 12.34 TP 195.80.00 Pav 0.64 435+70.11
439+0	154.75	153.75	-7.9 26.9 -27.9 6.9	-18.8 8.5 -27.3	-19.8 16.6 -36.4 99.0		154.75			196.34 T 12.75 TP 183.59 = Pav 0.14 436+52
450	157.75	156.75	-10.9 10.1 -21.0 5.9	-9.9 16.2 -23.7	-10.9 12.3 -23.2 6.8		157.75			187.23 T 12.75 171.48 171.52 T 172.73 158.79 0.04
438+0	160.75	159.75	-1.9 2.9 -4.8 35.2	-0.9 1.0 -1.9	-1.9 1.7 -3.6 37.9		160.75			159.88 T 12.85 146.33 0.03 146.83 T 12.65 134.18 0.79
490	159.85		0.0 25.0							134.97 T 12.99 126.98 126.07
450	162.25	162.75	28.8 21.2 35.6	21.5 10.5 11.0	2.3 9.3 0.0 25.0		Fill 163.75 Cut 162.25			122.05 T Ford
437+0.12	162.75 F.M. 165.25	165.75	17.5 26.0 -8.5 31.8	18.5 20.4 -1.9	19.0 16.8 -2.2 36.4		165.25			
436+50.16	168.23	168.75	28.1 12.7 -15.4 28.9	28.6 10.4 -17.2	28.0 15.9 -12.1 31.1		168.32			

East Torrey Pines Grade

SECTION

B.M. 127.98 B.P. 661.14
143+40.47 B.M. 140.36 55' 4" of 441+

26

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS	CUBIC YDS.		REMARKS
			LEFT	C	RIGHT		EXCAV.	EMBANK.	
443+0	130.82	129.75	8.1 15.3 7.2 35.8	-8.3 1.2 -11.5	-1.8 10.8 57.2	117.6 127.8 128.25 129.10 130.73			122.05T at Ford 121.99 12.73 131.72T 0.26 131.46 131.73 117.02T 110.13 141.96 141.80 159.76T 150.52 147.26 156.69T 12.16 144.23 = 441+0 141.33T 12.48 132.90 5.05 138.95T 12.57 126.38 130.10 136.48T
+50	133.75	132.75	5.2 12.7 7.5 39.3	-6.3 -12.4	7.2 15.5 22.8 62.8	133.75			159.71T 5.86 B.M. 155.90 = 446.50/4 446+0 155.87
442+0	136.75	135.75	+2.2 9.5 7.3 39.0	+3.2 10.2 -13.3	-10.3 -17.5 64.8	136.75			TP 144.23 = 441+0 141.33T 12.48 132.90 5.05 138.95T 12.57 126.38 130.10 136.48T
+50	139.75	138.75	-0.3 4.3 -5.1 35.7	+0.2 11.7 -11.5	-13.3 8.9 28.0 61.0	139.75			
441+0	141.25	141.75	5.4 1.4 -3.4 30.7	4.6 5.1 -0.5	3.8 10.8 14.6 49.9	141.75			start of curve
+50	144.25	144.75	+1.2 1.2 +1.0 30.4	+1.5 1.2 +2.4	-2.7 2.1 -2.6 40.9	144.75			
440+0	147.25	147.75	+1.2 1.2 +1.5 25.8	-0.9 1.1 -12.8	-2.7 8.3 25.0 80.5	147.75			

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS		CUBIC YDS.		REMARKS	
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.			
446+0	112.75	111.75	14.4 8.4 +3.0 27.0	16.6 8.0 +8.6 33.6	12.7 12.7 +4.7	15.4 16.2 +1.8 25.9	110.75	3°25'52"			132.95 AT B Ford 121.48 AT B Ford 7.30 11.718 14.00 12.9 AT Ford	
+50	115.75	114.75	13.4 7.4 +6.0 28.1	13.6 6.6 +7.0 32.0	14.4 11.9 +2.5	15.4 15.2 9.0 25.0	113.75	2°28'34"	BM 8 128.99	12.918 AT 6.19 14.1 P.M. 7.60 53.11 44.51 35 12.900		
445+0	118.67	117.75	10.5 7.5 +3.0 38.8	10.7 8.7 +2.0 32.0	11.4 8.6 +2.8	8.3 9.3 1.1 39.7	118.27 116.77	1°31'16"			Slope change Dec 12.50 122.00 AT B 6.31 129.31 AT	
+64.36	120.71											
+50	121.53	120.75	4.1 3.1 +1.0 27.8	11 7.9 3.1 31.0	5.7 3.9 +1.8	5.2 12.1 1.9 38.4	121.24 119.84	0°33'58"			120.71 8.40 8.40 0.0 Feb 26.31 Hall Grader Slopes 3:1 129.00 BM 8 0.11 129.11 AT 12.33 116.79 0.33 117.12 AT Ford	
+20.36	123.02	122.53	15.7 13.6 +2.1 27.2	15.8 14.5 +1.3 29.5	16.4 15.4 +1.0	13.2 8.5 -5.2 35.8	133.20 121.70					
444+0	124.05	123.75	10.9 10.9 +0.0 36.0	15.2 16.6 +1.4	12.0 -8.4 -20.4	134.49 122.99						
443+50	128.10	126.75	10.8 16.8 6.0 37.0		-0.3 9.1 -9.4	11.2 10.8 -0.4 56.3	127.63 126.78					

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade				Right Grade				
449+0	94.25	94.75	272 276 +274 30.6	274 270 +18.0	279 279 +279 320	94.25				129.18 T of Ford 12.50 11.50 12.67
+50	96.84	97.31	253 254 +231 30.8	249 250 +18.3	253 251 +242 321	96.84				
448+0	99.70	100.00	225 225 +210 30.3	221 222 +167	221 220 +127 310	99.43				117.12 T of Ford
+50	102.91	102.81	263 263 +187 29.7	264 263 +171	271 268 +103 302	102.11				103.25 13.83 12.80 +1.0
+14.97	103.25									
+20.97	104.90									
+09.97	105.66	105.16		out		104.32	5° 31' 53"			TP 102.95 on E.C. Hub 30' out cut.
										0° 25'
447+0	106.32	105.75	229 226 +163 29.1	234 230 +172	223 220 +183 292	104.89	5° 30' 28"			
446+50	109.65	108.75	195 199 +178 30.9	204 199 +78.5	214 198 +156 318	107.78	1° 23' 10"			

East Torrey Pines Grade
SECTION

BM 8210 B.P. C6/10/11
451+50 Left

BM 9305 02 Stob
44+0 29

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade								
+50	76.75	77.25	$\begin{matrix} 244 \\ 3.7 \\ 30.7 \\ 30.2 \end{matrix}$	$\begin{matrix} 23.9 \\ 2.6 \\ 14.7 \\ 174.7 \end{matrix}$	$\begin{matrix} 244 \\ 14.6 \\ 10.4 \\ 30.2 \end{matrix}$	76.75				$\begin{matrix} 12216.7 \text{ Bl. Ford} \\ 1288 \\ 1092.8 \\ 1077.1 \text{ A} \\ 126.6 \\ 970.2 \\ 417 \\ 1071.3 \text{ T} \end{matrix}$
451+0	79.25	79.75	$\begin{matrix} 305 \\ 11.6 \\ 15.9 \\ 29.7 \end{matrix}$	$\begin{matrix} 39.9 \\ 3.3 \\ 13.7 \end{matrix}$	$\begin{matrix} 21.9 \\ 12.6 \\ 4.3 \\ 29.7 \end{matrix}$	79.25	759.39			
								1369.00		
+50	81.75	82.25	$\begin{matrix} 280 \\ 10.3 \\ 17.7 \\ 39.4 \end{matrix}$	$\begin{matrix} 27.5 \\ 14.8 \\ 12.7 \end{matrix}$	$\begin{matrix} 280 \\ 18.3 \\ 17.7 \\ 29.9 \end{matrix}$	81.75	719.05			
								1372.50		
								3741.5		
451+0	84.25	84.75	$\begin{matrix} 255 \\ 11.7 \\ 18.4 \\ 29.6 \end{matrix}$	$\begin{matrix} 25.3 \\ 11.3 \\ 13.7 \end{matrix}$	$\begin{matrix} 15.5 \\ 15.5 \\ 10.0 \\ 30.0 \end{matrix}$	84.25	763.26			Nail 5.56
								1488.70		
+50	86.75	87.25	$\begin{matrix} 230 \\ 3.9 \\ 11.1 \\ 29.8 \end{matrix}$	$\begin{matrix} 22.5 \\ 7.4 \\ 15.1 \end{matrix}$	$\begin{matrix} 23.0 \\ 11.2 \\ 11.8 \\ 30.9 \end{matrix}$	86.75	844.53			
								1608.85		
								3097.55		
451+0	89.25	89.75	$\begin{matrix} 32.9 \\ 11.0 \\ 17.1 \\ 30.3 \end{matrix}$	$\begin{matrix} 32.4 \\ 11.0 \\ 15.4 \end{matrix}$	$\begin{matrix} 20.5 \\ 3.0 \\ 11.5 \\ 31.3 \end{matrix}$	89.25	893.07			
449+50	91.75	92.25	$\begin{matrix} 30.4 \\ 3.4 \\ 13.0 \\ 30.3 \end{matrix}$	$\begin{matrix} 33.9 \\ 13.7 \\ 16.2 \end{matrix}$	$\begin{matrix} 30.4 \\ 18.8 \\ 12.1 \\ 31.3 \end{matrix}$	91.75				

East Torrey Pines Grade

SECTION

Oct 29-30
30

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
156+0	59.25	59.75	30.3 11.8 +19.1 29.8	18.8 12.7 +12.7	18.7 18.7 +18.7 28.7	59.25	Stake ok			101.137 21 Ford 12.13 89.00 86.57 89.577 13.65 27.99 TP 70.92 27.99 70.99 18.11 77.91 A Ford
+50	61.75	62.25	27.8 2.5 +26.3 30.1	27.3 12.3 +15.1	11.2 9.2 +8.3 29.2	61.75				
155+0	64.25	64.75	25.3 2.9 +22.4 30.6	22.2 16.6 +16.6	13.7 11.7 +12.7 30.7	64.25	OK			
+50	66.75	67.25	31.4 2.6 +28.8 31.1	33.9 15.9 +18.0	22.8 9.9 +12.9 31.5	66.75				
154+0	69.25	69.75	31.9 3.4 +28.5 30.9	31.4 14.6 +16.8	31.9 12.7 +19.2 31.1	69.25				
+50	71.75	72.25	31.4 2.4 +29.0 30.3	28.9 9.9 +16.6	22.4 12.6 +11.8 30.9	71.75				
153+0	74.25	74.75	31.9 3.6 +28.3 30.6	26.4 10.3 +16.1	26.9 15.6 +11.5 30.8	74.25	Mail ok			

5-05

East Torrey Pines Grade

SECTION

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade					Right Grade			
+50	41.75	42.25	121 121 0.0 35.0	116 168 -5.2	-15 16.7 -1.6 75.4	13.25				779.78 Fire 12.77 65.17 68.97 66.14 T 12.83 53.31 8.50 53.81 T 12.14 41.17 41.69 Ford
459+0	44.25	44.75	96 96 +3.4 36.3	91 107 -1.6	81 164 83 70.5	45.75				
+50	46.75	47.25	194 167 +6.7 38.4	189 169 +2.6	80 85.0	46.75				
458+0	49.25	49.75	119 37 +13.2 31.6	114 97 +6.7	169 138 +31 26.6	49.25				
+50	51.75	52.25	263 89 +16.9 33.5	139 88 +11.1	144 89 +6.1 38.1	51.75				
457+0	54.25	54.75	237 30 +19.7 29.9	232 104 +128	237 122 +82 29.1	54.25				Mail ok
456+50	56.75	57.25	212 15 +19.7 29.9	207 10 +13.4	212 126 +7.6 29.8	56.75				

East Torrey Pine Grade

SECTION

BM 4024 B.P. C6101st
460+0 Left

BM 3050 B.P. End of C6
Bottom Torrey Pine
Grade

32

STA.	ELEVA.	GRADE	CUT OR FILL						AREAS		CUBIC YDS.		REMARKS
			LEFT		C	RIGHT		EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
		Left Grade											
+50	29.87	27.25	-2.57 Edge Slope -3.40 79°	-1.67 -2.97	-1.67	-1.67 -1.97 -5.46		27.63	2° 17' 04"		53.21 T		Oct 1888
462+0	32.28	29.75	-2.53 -2.53 -2.53 -2.53 -2.53	-2.53 -2.53 -2.53 -2.53 -2.53	-2.53	-2.53 -2.53 -2.53 -2.53 -2.53		30.17	1° 19' 46"		4.17 T B/Bank		41.76 T B/Bank BM 3050 26.33 - 5.11 11.30 38 36.32
+50	34.49	32.25	-2.24 -2.24 -2.24	-2.24 -2.24 -2.24	-2.24	-2.24 -2.24 -2.24		32.79	0° 22' 49"		483		38.17 T 12.54 26.17 T 37.44 T 12.50 12.94 16.56 T 15.50 T 19.30 6.42 9.92 T
+30.38	35.31	33.23	-2.08 -2.08 -2.08	-2.08 -2.08 -2.08	-2.08	-2.08 -2.08 -2.08		33.83			1896		
461+0	36.50	34.75	-1.75 -1.75 -1.75	-1.75 -1.75 -1.75	-1.75	-1.75 -1.75 -1.75		35.47					
+50	38.55	37.25	-1.30 -1.30 -1.30	-1.30 -1.30 -1.30	-1.30	-1.30 -1.30 -1.30		38.14					
460+0	40.80	39.75	-1.05 -1.05 -1.05	-1.05 -1.05 -1.05	-1.05	-1.05 -1.05 -1.05		40.73					
551+0	41.23							41.17					

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade to								
466+0	17.77	5+0.05 15.15	-7.9 -7.9 -7.9	-5.7 -7.8	-5.6 -6.2 -11.8 -15.7	15.53	8° 58' 08"			
+80		PVC 15.25								992T Bl Face
+50	18.12	15.50	-8.3 -5.2 -13.5 -78.3	-5.7 -11.7	-6.0 -8.2 -14.2 -19.3	15.88	8° 00' 50"			
+30		15.78								
465+0	18.99	16.37	-9.1 -13.7 -18.6	-6.5 -5.3 -11.8	-6.9 -13.5 -20.4 -58.6	16.75	7° 03' 32"			
+80		16.89								
+50	20.42	17.80	-10.6 -4.3 -14.9 -50.4	-8.9 -13.1 -20.1	-11.1 -8.7 -32.8 -62.6	18.18	6° 06' 15"			1118.90 Herold Slough
+30		18.53								
464+0	22.41	19.79	-18.8 -12.1 -19.4 -59.1	-15.7 -8.0 -23.7	-16.1 -8.8 -34.9 -66.4	20.17	5° 08' 57"			
+80		PVC 20.75								
+50	24.87	22.25	-20.7 -18.8 -21.5 -70.8	-18.6 -8.7 -26.8	-18.5 -8.8 -27.3 -69.0	22.13	4° 11' 40"			
463+0	27.37	24.75	-23.2 -18.6 -31.7 -75.6	-20.6 -8.0 -29.6	-21.0 -8.2 -32.4 -73.1	25.13	3° 14' 22"			

36.33
1.24
37.24
37.42
36.73
0.13
27.57
12.36
14.20
14.21
14.17
12.47
10.4
22.3
41.7

SECTION

34

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade $\frac{1}{2}$				Right Grade				
+50	16.02	13.40	$\frac{3.9}{2.3}$ $\frac{2.3}{5.3}$ 36.0	-8.8 -9.7	$\frac{-0.8}{11.3}$ $\frac{-12.1}{46.3}$	13.78	15°39'12"			992 T 81 Ford 3.62 6.31 6.71 13.027
467+0	16.27	13.65	$\frac{3.3}{2.7}$ $\frac{2.7}{4.7}$ 41.7	$\frac{-13.7}{-14.3}$	$\frac{-12.9}{-13.4}$ $\frac{-48.1}{48.1}$	14.03	14°41'54"			
+50	16.58	13.90	$\frac{3.5}{2.3}$ $\frac{2.3}{11.3}$ $\frac{11.3}{45.0}$	$\frac{-9.9}{-12.7}$	$\frac{-1.3}{11.3}$ $\frac{-12.6}{46.9}$	14.28	13°44'37"			
468+0	16.77	14.15	$\frac{4.9}{3.0}$ $\frac{3.0}{4.0}$ 46.0	$\frac{-4.3}{9.7}$ -13.9	$\frac{-4.1}{4.8}$ $\frac{-12.1}{46.6}$	14.53	12°47'19"			
+50	17.02	14.40	$\frac{7.1}{2.1}$ $\frac{2.1}{15.2}$ 50.8	$\frac{-4.5}{9.1}$ -13.6	$\frac{-4.9}{5.4}$ $\frac{-10.8}{43.5}$	14.78	11°50'01"			
467+0	17.27	14.65	$\frac{7.3}{2.7}$ $\frac{2.7}{15.2}$ 49.3	$\frac{-4.7}{8.7}$ -13.7	$\frac{-5.1}{10.2}$ $\frac{-43.3}{43.3}$	15.03	10°52'43"			
466+50	17.52	14.90	$\frac{7.4}{2.4}$ $\frac{2.4}{16.1}$ 52.2	$\frac{-5.0}{9.7}$ -10.7	$\frac{-5.4}{5.9}$ $\frac{-11.3}{45.0}$	15.28	9°55'26"			

SECTION

BM 11.69
078 No 7
4721161FC

Nov 1-30

35

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
+70	13.56	11.90	-0.5 1.7 -1.9 30.9	+1.1 9.6 8.5	+0.4 1.4 1.0 4.0	12.65				
+11.61-FC	14.17	12.09		out		12.69	20° 39' 00"			BM 11.56 = 11.57 13.92 3" I.P. 48.21 11.57
47240	14.32	12.15	-1.9 1.4 -2.7 32.1	+1.6 -6.0	13.0 12.0 46.0	12.71	20° 25' 40"			Nov 5-30 BM 11.57 1.47 13.041
+50	14.91	12.40	-1.9 1.4 -3.3 33.0	10.3 9.0	13.9 -1.2 46.3	12.83	19° 28' 23"			
47140	15.27	12.65	-3.2 1.8 -5.8 33.7	+1.1 9.6 8.5	+0.9 1.5 -1.4 5.04	13.03	18° 21' 05"			
+50	15.52	12.90	-1.5 1.7 -3.2 34.3	+0.8 1.2 -1.2	+0.5 1.2 -1.3 48.7	13.28	17° 33' 47"			
47040	15.77	13.15	-2.0 1.0 -1.0 34.0	+0.6 1.2 -1.2	+0.3 1.3 -1.3 47.7	13.53	16° 36' 29"			

Left Grade
Right Grade

High Grade
Low

5:005

Point 3 on
Page 107

SECTION

Sec Grade Change Page 41

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
476+0	9.65	10.15	$\frac{24}{27}$ $\frac{27}{25}$ $\frac{258}{258}$	$\frac{29}{25}$	$\frac{132}{113}$ $\frac{150}{150}$	11.15				13.07 T & Ford
+50	11.40	10.40	$\frac{16}{22}$ $\frac{22}{28}$ $\frac{380}{380}$	$\frac{26}{27}$ $\frac{27}{21}$	$\frac{16}{133}$ $\frac{117}{156}$	11.40				
475+0	11.65	10.65	$\frac{14}{20}$ $\frac{20}{28}$	$\frac{24}{22}$ $\frac{22}{28}$	$\frac{14}{129}$ $\frac{109}{444}$	11.15				
+50	11.90	10.90	$\frac{16}{20}$ $\frac{20}{28}$	$\frac{21}{21}$ $\frac{21}{28}$	$\frac{16}{124}$ $\frac{123}{250}$	11.90				
474+0	12.15	11.15	$\frac{19}{24}$ $\frac{24}{28}$	$\frac{19}{20}$ $\frac{20}{250}$	$\frac{19}{129}$ $\frac{124}{466}$	12.15				
+50	12.13	10.95	$\frac{14}{20}$ $\frac{20}{28}$	$\frac{16}{20}$ $\frac{20}{28}$	$\frac{14}{125}$ $\frac{129}{289}$	12.39				
473+0	12.88	11.65	$\frac{14}{20}$ $\frac{20}{28}$	$\frac{14}{20}$ $\frac{20}{28}$	$\frac{14}{125}$ $\frac{129}{289}$	12.57				

Left Grade

Right Grade

Cut Grade

Fill Grade

5.005

Sec Grade Change

SECTION

Sec Grade Change Page

BM 10.57
on L Mo 7
478+48.04 P.O.T

327

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		<i>Left Grade</i>					<i>Right Grade</i>			
475+0	9.40	8.40	3.3 3.2 +0.1 381	1.3 1.2 -0.1 424	3.3 3.2 -0.1 424	9.40				12.04 T. Bl. 500 8.17 48.7 7.25 127.21
479+0	9.65	8.65	3.1 3.0 +0.3 382	1.1 1.0 -0.1 424	3.1 3.0 -0.1 424	9.65				
475+0	9.90	8.90	2.8 2.7 +0.4 382	3.8 3.7 -0.1 418	2.8 2.7 -0.1 418	9.90				
478+0	^{cs} 10.15	9.15	2.6 2.5 +0.3 382	3.6 3.5 -0.1 423	2.6 2.5 -0.1 423	10.15				
475+0	^{cs} 8.90	9.40	1.6 1.5 +1.6 358	3.1 3.0 -0.1 424	1.6 1.5 -0.1 424	10.40				
477+0	^{cs} 9.15	9.65	3.9 3.8 +1.8 359	3.1 3.0 -0.1 424	3.9 3.8 -0.1 424	10.65				
476+50	^{cs} 9.40	9.90	3.6 3.5 +1.6 358	3.1 3.0 -0.1 424	3.6 3.5 -0.1 424	10.90				

SECTION

D. 610-38
482+50 **38**

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade								
483+0	7.32	6.32	-0.2 2.2 2.9 32.1	+0.8 9.3 8.5	-0.2 16.6 16.4 49.6		7.32			12.72 A B L Ford 5.95 - 482+ BM 1/2 6.77 - 482+52 6.72
+60		6.77								
+50	7.81	6.81	-0.8 1.8 2.5 31.8	+0.3 8.1 8.3	-0.8 14.0 14.7 50.1	10' Water	7.84			
+40		7.05								6.76 0.20 7.16 A
482+0	8.15	7.15	4.6 6.6 2.0 31.3	5.6 12.5 6.9	-1.0 13.7 14.7 50.1	10' Water	8.15			
+50	8.40	7.40	4.3 6.0 1.7 30.6	5.3 10.7 5.4	4.3 10.3 6.0 48.5		8.40			
481+0	8.65	7.65	4.1 6.3 2.2 39.3	5.1 12.6 7.5	4.1 11.0 11.9 45.9		8.65			
+50	8.90	7.90	3.8 6.6 2.8 29.2	4.8 10.2 5.4	3.8 16.4 12.4 46.6		8.90			
480+0	9.15	8.15	3.6 6.9 3.3 38.5	4.6 10.5 5.9	3.6 14.0 11.4 45.1		9.15			

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade 2					Right Grade 241			
BM.	3.01	07 1/2 Mon 186+7487 Pl.								
End	+8150 POC. 7.67	2.59	-0.5 -7.5 -7.0 38.5	4.57 3.22 +0.70 on P1	6.6 17.2 -8.0 40.0		0.51		11° 19' 06"	
	186+4075 7.56	2.71	-0.4 -3.4 -3.2 34.0	1.15 3.92 +0.42 on P1	6.4 9.7 -3.3 33.0		0.80		7° 19' 42"	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
		Left Grade			
+50	12.21	11.24	1.7 2.4 -0.7 29.1		
475+0	12.34	11.34	1.0 2.3 -0.7 29.1		
+50	12.41	11.44	1.0 2.0 -1.0 29.5		
474+0	12.54	11.54	1.0 2.4 -1.0 29.5		
+50	12.69	11.64	1.0 2.4 -1.0 29.9		
473+0	12.97	11.74	1.2 2.4 -1.0 30.1		
472+70		0.118°			

March 22, 1911
 Sisson
 McHugh
 Markham

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
Right Grade				
12.21				
12.34				
12.41				
12.54				
12.63				
12.66				
				BM 11.57 = 11 2.75 12.99

SECTION

42

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade 2								
479+0	11.54	10.54	2.1 3.5 -1.5 2.0			11.54				
+50	11.64	10.64	2.3 3.7 -1.4 30.1			11.64				
478+0	11.74	10.74	2.3 3.3 -1.0 29.8			11.74				
+50	11.84	10.84	2.1 3.2 -1.1 29.7			11.84				
		-0.2%								
477+0	11.94	10.94	2.0 3.2 -1.2 29.4			11.94				
+50	12.04	11.04	1.0 2.8 -1.8 29.4			12.04				
476+0	12.14	11.14	1.8 2.6 -0.8 29.2			12.14				

SECTION

MOIT 332

43

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
	Left Grade	Z								
+50	10.84	9.84	$\frac{3.3}{5.6}$ 36.4			10.84				13.99 217 583 4.37 14191
482+0	10.94	9.94	$\frac{4.2}{5.3}$ -51 35.7			10.94				
+50	11.04	10.04	$\frac{3.1}{4.3}$ 34.5			11.04				
481+0	11.14	10.14	$\frac{3.0}{6.7}$ -37 33.6			11.14				
+50	11.24	10.24	$\frac{4.0}{3.1}$ 32.7			11.24				
480+0	11.34	10.34	$\frac{3.8}{5.5}$ -25 31.8			11.34				
479+50	11.44	10.44	$\frac{3.7}{2.6}$ -1.9 30.9			11.44				

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade					Right Grade			
+7421	5.15	4.15	9.0 10.7 -1.7 30.6				5.15			1419 ± Bl. End BM 678
+50	5.71	4.71	8.5 10.5 -2.0 31.0				5.71			
185+	7.08	6.08	7.1 10.2 -3.1 33.7				7.08			
+50	8.45	7.45	5.7 10.1 -4.4 34.6				8.45			
484+	9.65	8.65	6.5 10.0 -3.5 36.3				9.65			
+50	10.38	9.38	5.8 9.8 -4.0 37.0				10.38			
183+	10.74	9.74	5.4 9.4 -4.0 37.0				10.74			

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		Left Grade 2								
B.M.	3.01	on 2 Mon 486+74.87 Pl.								
+81.50	3.61	2.61		$\begin{array}{r} 10.6 \\ 12.0 \\ -14 \\ \hline 30.1 \end{array}$			3.61			
+107.5	3.97	2.97		$\begin{array}{r} 10.7 \\ 16.7 \\ -0.5 \\ \hline 28.8 \end{array}$			3.97			
+86.70	4.65	3.65		$\begin{array}{r} 9.5 \\ 16.8 \\ -1.3 \\ \hline 30.0 \end{array}$ Next of Paving			4.65			

Shrinkage Grades

161+30.38 to 472+0

SECTION

April 16/31

46

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
166+0	17.97	15.25	15.73								
+50	18.22	15.70	16.08								
165+0	19.19	16.57	16.95								
+50	20.62	18.00	18.38								
164+0	22.71	20.09	20.47								
+50	25.17	22.55	22.93								
163+0	27.67	25.05	25.43								
+50	30.17	27.55	27.93								
162+0	32.48	29.95	30.37								
+50	34.59	32.35	32.89								
161+30.38	35.31	33.23	33.83								

SECTION

SECTION

47

STA.	ELEVA.	GRADE	CUT OR FILL				AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.		
472+0	14.42	12.25	12.81								
+50	15.01	12.50	12.93								
471+0	15.37	12.75	13.13								
+50	15.62	13.00	13.38								
470+0	15.87	13.25	13.62								
+50	16.12	13.50	13.88								
469+0	16.37	13.75	14.13								
+50	16.62	14.00	14.38								
468+0	16.87	14.25	14.63								
+50	17.12	14.50	14.88								
467+0	17.37	14.75	15.13								
466+50	17.62	15.00	15.38								

Shrinkage Grader

SECTION

437+50 to 444+50.86

SECTION

April 48
17th

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
442+0	136.95	135.95	136.95							
+50	139.95	138.95	139.95							
441+0		141.95	142.95							
+50		144.95	145.95							
440+0		148.05	149.05							
+50		151.05	152.05							
439+0		154.05	155.05							
+50		156.95	157.95							
438+0		159.85	160.85							
437+50		162.75	163.75							

Left Grade

Right Grade

Conert 443+40
 2 Type B3 Carb 1 1/2 ft

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
					AZ 90°
		92.0			of 30° R.C.P.
070		Shoulder Grade Left 128.64		Flow Line 3.92 120.60 117.77	
+16.5		= 1 1/2 ft		5.94 118.35 113.74	
+39.5		= 3		8.88 115.21 112.11	
+66.0		= 1 1/2 ft		12.69 111.60 115.8	
+99.0		= Outlet of Pipe		17.19 107.10 116.7	
		Re Set Stake Nov. 1930			
B.M. 129.00 0.40 129.40 12.01 117.39 116.28 123.28		B.M. #8	129.00 0.25 129.25 117.23 114.33 116.97 124.29	Half Point 53 ft 445+35	

141.48 T
 1126
 B.M. = 140.36
 55.10 / 44.40
 Nov. 7. 30. 53

AREAS	CUBIC YDS.	REMARKS	
			EXCAVATION
		Carb 1 1/2 ft 443+40 on Left	
443+47.25		-5.47 127.75 Top of Box Flanking	
443+42.25		= N End of hole 128.92 -3.70 127.70 -6.43	
		118.35 5.94 122.74	
443+31.25		= S End of hole 128.62 -4.33 127.73	
443+26.25		= T.I. -6.62 128.89 -7.57	
		B.M. #8 129.00 0.10 129.10 0.45 129.65 128.83 141.48 T 0.21 141.27 132.5 154.53 T 15.13 12.72 167.10 T	
		Curb 1 1/2 ft 443+40 on Right	
443+47.25		T.I. -5.88 127.30 Top of Box Flanking	
443+42.25		= N End of hole 127.61 -3.32 127.11 -7.48	
		111.60 12.19 115.8	
443+31.25		= S End of hole 128.29 -4.99 127.11	
443+26.25		= T.I. -6.88 128.60 -7.47	
		0.53 12.54	

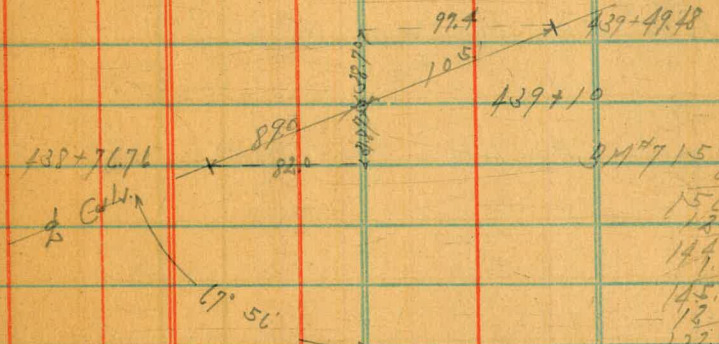
Culvert 439+10

SECTION

NO. 532

Nov 13-30
54

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	



Note: For $\frac{1}{2}$ Levels See Page 64

107.77 Slope
115.80
9.23
119.007

118.88 Slope
11.67
130.527

Convent Sta 432+75

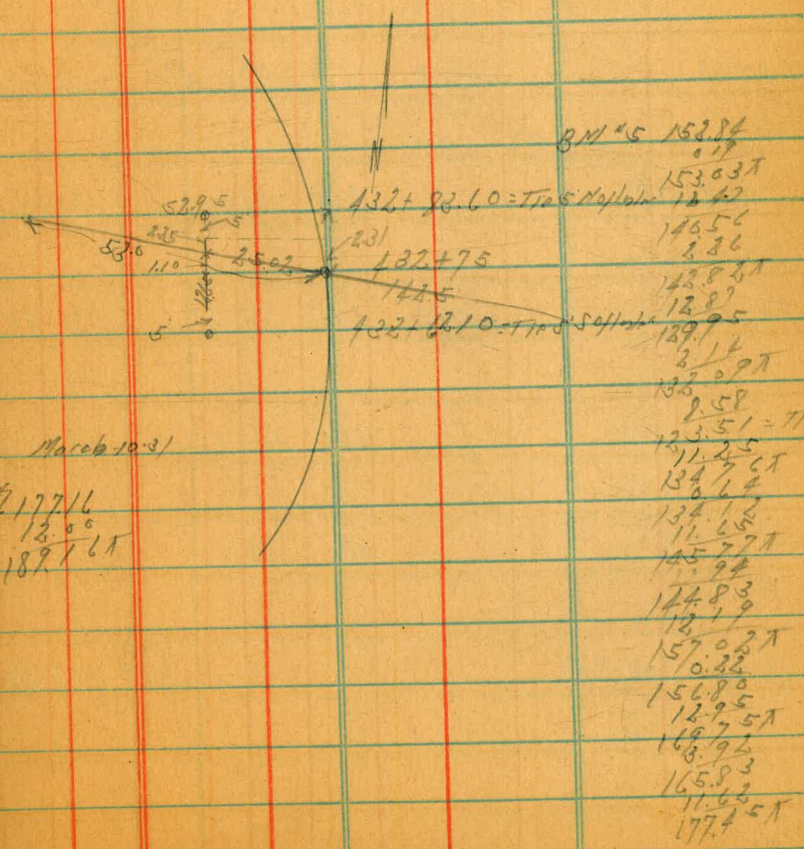
SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
Convent 432+75			43 87' 34" L		
			192.0 of 18" R.C.R	Flowline	
0+0 = Beg. Pipe			175.30	2.15 1.20 +0.67	
		190.13 177.45 -12.7 -13.7			
+36 = Brk		190.13 177.45 -12.7 -13.7	154.00	15.75 11.82 +3.77	
+53 = 2			out		
+68 = Brk			139.60	6.17 0.63 +5.83	
				13.04 4.97 +8.07	
+105			132.73	8.90 0.66 +8.26	
+153.0			125.86		
+195.5			119.00	15.76 1.20 +2.25	

Note of Levels See Page 65

Nov 18 30
56

AREAS	CUBIC YDS.		REMARKS
	EXCAVATION	EMBANKMENT	
	EXCAV.	EMBANK.	
Curb Inlet on left			BM 165.54 174.71
			Re Stake Feb 23/1
432+83.60 = 5" Half End Inlet	-1.57 -8.7	Top Ch	-21.00 -16.04
			190.73 -2.928 -17.38
132+62.10 = 5" S of N End Inlet	-2.86 -8.07		-22.24 -17.30
			190.02 -2.648 -20.07



March 10/31
BM 177.16
12.00
189.16

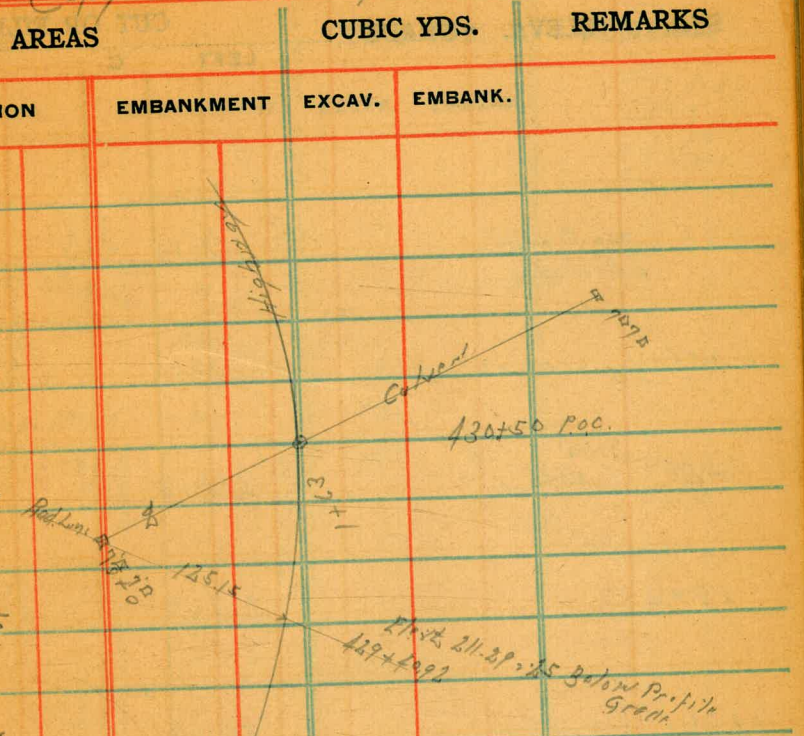
Culvert Sta 430+50

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
Culvert 430+50		H ₂ 52' 11" RL	352' P.C.P. 30"		
	+	π	-	Stake Elev.	Flora Elev.
0+0 = Beg Pipe	153.00	8.23	149.57		146.98
+13		7.16	145.84		142.93
+23		10.67	142.32		139.16
+23	142.12	8.38	139.74		136.39
+63 = 2		9.18	133.94		131.62
2+13	130.92	8.45	128.47		126.91
+63 = Brk		5.92	125.00		122.20
3+13		9.21	121.71		118.83
+52 = End Pipe				7.77 5.87 11.90	116.20

Copy From 1411 Page 63

AREAS	CUBIC YDS.		REMARKS
	EXCAVATION	EMBANKMENT	
	EXCAV.	EMBANK.	
Cuts			
+2.59			
+2.91			
+2.17			
+3.35			
+2.32			
+1.56			
+2.80			
+2.88			
+1.90			



152.84 BM #5
 0.72
 153.00 x
 12.87
 140.13
 11.97
 142.13 x
 13.25
 139.17
 131.25
 130.92 x
 121.71 on Stake 3+13
 2.86
 132.97 x

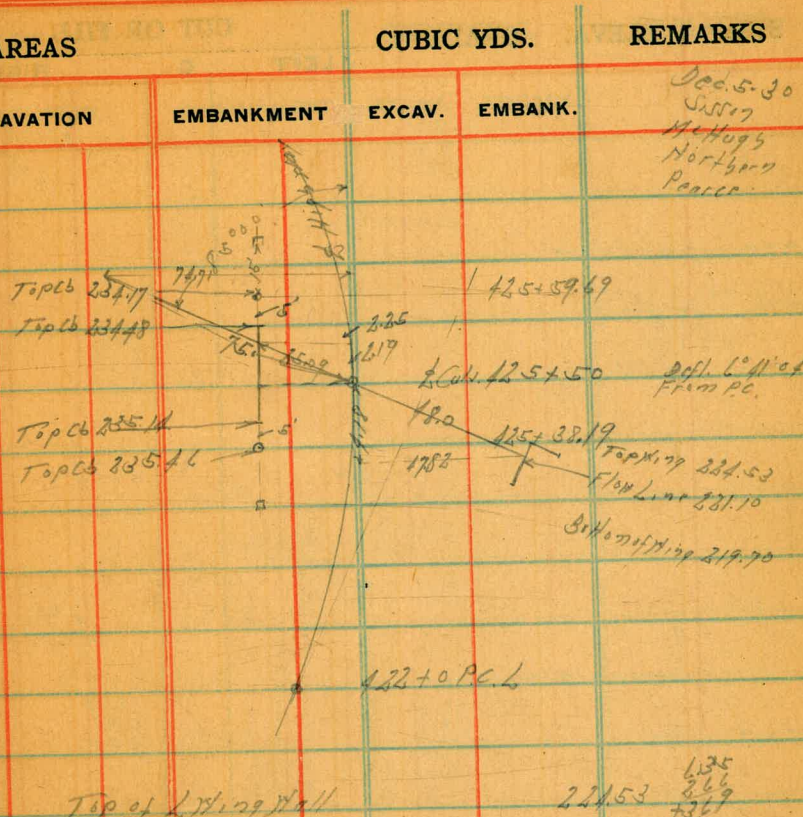
Culvert Sta 425+50

SECTION

SECTION

58

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
0+0 = Beg Pipe 24" Lifford Wall			221.10	978 21.2 17.73						Dec. 5. 30 J. S. 17 McHugh Northern Pearce
+24			217.57	336 0.48 +3.28						
+48 = 1/2 Highway			214.04	580 279 +3.70						
+75.5			208.52	1141 808 +33.33						
+23.0 = End Pipe			203.00	1693 1844 -1.51						
March 10-31										
April 1-31										
3M 253.47			253.47	3M 230.65	141 Small 0.25					
1.22			2.00	239.87	11.03					
151.69 T			255.55	218.8	0.08					
11.57			12.01	219.92 T	11.9					
243.15			242.54							
244.23 T			244.53 T							
21.275			18.95							
231.38			231.58							
236.36			21.70 T							
231.74			233							
12.07										
217.67										
218.15										
221.82 T										



Dec. 5. 30
J. S. 17
McHugh
Northern
Pearce

2.05
125+50
180
125+38.19
175

Top of Lifford Wall
221.53
135
266
137

125+0 P.C.L.

Curb 19/2 on Left

125+59.69 = 5/1 of H End of Inlet Top of Grade 234.17-18.17

125+38.19 = 5/5 of S End of Inlet Top of 235.46 -15.51
23.75

Calvert Sta 419+75.61-EC
SECTION

May 83

SECTION

59

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
		26734 9.7 27498 Bit Hard Mdn			31724.48 13.00 11790 27438					
0+0				26510						
+23				26441	9.97 2.76 7.78					BM 26448 27 Hub 13.17 2736.57
+53		11.47 11.87 07.51 +1.00		26351	10.88 1.20 12.21					
+83		12.37		26261	11.77 4.73 7.04					
+113		13.28 13.28 +1.00		26170	12.68 3.91 18.97					
+140		14.09 13.08 +1.00		26090	13.48 1.00 13.54					
							419+8286 = 26920 Top of 1911/11 7.11 5.33 12.00			
							419+7561 EC		* Drain	-1.40
							419+6186 = 27049 5.5 def. 1/11 5.16 3.67 -0.43			

Culvert Sta 410 +50

SECTION

SECTION

60
May 20-31

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.	REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT		
Culvert Sta 410 +50									
									BM 320.04 3.02 332.08
0+0 - Beg of Pipe			320.60			410+78.80 B.C.P.			May 20-31 BM 330.06 2.95 333.01
+23 - High way			320.35	11.73 5.22 +6.51	9.99				
+48 - Rt. Face Cb			320.10	11.98 5.02 +6.96		410+57.25 5.10/10/11	2431	321.29	324.29 8.95 329.20
+65.5 End			319.90		13.11	410+550 10.75	2493	321.25	
						410+36.25 5.5/11/10/11	2007	325.53	7.48 6.51 +1.53
									325.53 4.87 330.34

culvert Sta 401+50

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT
Culvert 401+50					
0+0 = Beg of Pipe			370.60	11.49 7.70 +4.79	
+23 = Highway			370.26	12.83 6.87 +5.96	
+46 = West Edge Inlet on End			369.96		
+53.5 = End Pipe			369.80	13.28 8.73 +4.55	

C. 0.0195

SECTION

April 8-31 61

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
Curb Inlet on Left				
401+57.25 = 5' N of W End of Inlet		374.98 17.21 16.84 -0.37		BM 392.01 No 1 1.93 393.99 12.67 381.40 1.69 383.09
401+36.25 = 5' S of S End of Inlet		375.91 16.23 10.27 -0.47		392.61 BM #1 1.57
401+57.25 = 5' N of W End of Inlet	374.98	374.98	374.98	393.63 12.35 381.28 4.29 386.19
401+50				
401+36.25 = 5' S of W End of Inlet	375.91	375.91	375.91	
Curb Inlet on Right				
401+57.25 = 5' N of W End of Inlet		374.98 17.21 16.84 -0.37		
401+36.25 = 5' S of W End of Inlet		375.91 16.23 10.27 -0.47		

Culvert 439+10

SECTION

Levels

AS 67° 56' RT

SECTION

64

STA.	ELEVA.	GRADE	CUT OR FILL		AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	
		133.68 Ford Page 54							
0+0		Bog. Curve	12.0		120.7				
+15			14.6		119.1				
+26			16.2		117.5				
+30			18.4		115.3				
+56			20.3		113.4				
+58			9.1		124.6				
TP	0.11	120.99	128.0		120.88				
+88			6.4		114.6				
+96			3.3		117.7				
1+14			7.5		112.5				
+22			10.6		110.1				
+46			12.3		108.7				
+47			9.3		111.7				
+55			11.0		110.0				
+60			13.8		107.1				
+74			14.6		106.4				
+75			11.8		109.2				
+83			11.8		109.2				
+84			15.4		105.6				
+89 - End			15.5		105.5				

Culvert 425+50
 2 Levels

SECTION

MOIT332

Dr. E. J. 66

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
				Elev						
BM	0.23	230.88		230.65						
0+0			7.3							
TP	0.08	219.93	11.03	219.85						
+21			0.0							
+42			3.2							
+85			10.5							
+92			11.4							
+105			6.6							
+13			9.3							
+15			15.2							
+23 - End			17.0							

Shrinkage Grades
425+0 to 434+0

SECTION

SECTION

April 23-31
5517
McHugh
67

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
+50	211.83	211.45	214.07							
429+0	214.83	214.45	217.07							
+50	217.83	217.45	220.07							
428+0	220.73	220.35	222.97							
+50	223.63	223.25	225.87							
427+0	226.53	226.15	228.77							
+50	229.43	229.05	231.67							
426+0	232.33	231.95	234.57							
+50	235.23	234.85	235.85							
425+0	238.13	237.75	238.75							

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	
434+0	182.75	182.75	186.37							
+50	187.23	186.85	189.47							
433+0	190.43	190.05	192.67							
+50	193.63	193.25	195.87							
432+0	196.83	196.45	199.07							
+50	199.83	199.45	202.07							
431+0	202.83	202.45	205.07							
+50	205.83	205.45	208.07							
430+0	208.83	208.45	211.07							

SECTION

75

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS	CUBIC YDS.		REMARKS
			LEFT	C	RIGHT		EXCAV.	EMBANK.	

EXCAVATION

EMBANKMENT

EXCAV.

EMBANK.

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT

Tangents and External to a 1° Curve.

Angle	Tangent	External	Angle	Tangent	External	Angle	Tangent	External
1°	50.00	22	11°	551.70	26.50	21°	1061.9	97.87
10'	58.34	30	10'	560.11	27.31	10'	1070.6	99.16
20	66.67	39	20	568.53	28.14	20	1079.2	100.75
30	75.01	49	30	576.95	28.97	30	1087.8	102.35
40	83.34	61	40	585.36	29.82	40	1096.4	103.97
50	91.68	73	50	593.79	30.68	50	1105.1	105.60
2	100.01	.87	12	602.21	31.56	22	1113.7	107.24
10	108.35	1.02	10	610.64	32.45	10	1122.4	108.90
20	116.68	1.19	20	619.07	33.35	20	1131.0	110.57
30	125.02	1.36	30	627.50	34.26	30	1139.7	112.25
40	133.36	1.55	40	635.93	35.18	40	1148.4	113.95
50	141.70	1.75	50	644.37	36.12	50	1157.0	115.66
3	150.04	1.96	13	652.81	37.07	23	1165.7	117.38
10	158.38	2.19	10	661.25	38.03	10	1174.4	119.12
20	166.72	2.43	20	669.70	39.01	20	1183.1	120.87
30	175.06	2.67	30	678.15	39.99	30	1191.8	122.63
40	183.40	2.93	40	686.60	40.99	40	1200.5	124.41
50	191.74	3.21	50	695.06	42.00	50	1209.2	126.20
4	200.08	3.49	14	703.51	43.03	24	1217.9	128.00
10	208.43	3.79	10	711.97	44.07	10	1226.6	129.82
20	216.77	4.10	20	720.44	45.12	20	1235.3	131.65
30	225.12	4.42	30	728.90	46.18	30	1244.0	133.50
40	233.47	4.76	40	737.37	47.25	40	1252.8	135.35
50	241.81	5.10	50	745.85	48.34	50	1261.5	137.23
5	250.16	5.46	15	754.32	49.44	25	1270.2	139.11
10	258.51	5.83	10	762.80	50.55	10	1279.0	141.01
20	266.86	6.21	20	771.29	51.68	20	1287.7	142.93
30	275.21	6.61	30	779.77	52.89	30	1296.5	144.85
40	283.57	7.01	40	788.26	53.97	40	1305.3	146.79
50	291.92	7.43	50	796.75	55.13	50	1314.0	148.75
6	300.28	7.86	16	805.25	56.31	26	1322.8	150.71
10	308.64	8.31	10	813.75	57.50	10	1331.6	152.69
20	316.99	8.76	20	822.25	58.70	20	1340.4	154.69
30	325.35	9.23	30	830.76	59.91	30	1349.2	156.70
40	333.71	9.71	40	839.27	61.14	40	1358.0	158.72
50	342.08	10.20	50	847.78	62.38	50	1366.8	160.76
7	350.44	10.71	17	856.30	63.63	27	1375.6	162.81
10	358.81	11.22	10	864.82	64.90	10	1384.4	164.86
20	367.17	11.75	20	873.35	66.18	20	1393.2	166.95
30	375.54	12.29	30	881.88	67.47	30	1402.0	169.04
40	383.91	12.85	40	890.41	68.77	40	1410.9	171.15
50	392.28	13.41	50	898.95	70.09	50	1419.7	173.27
8	400.66	13.99	18	907.49	71.42	28	1428.6	175.41
10	409.03	14.58	10	916.03	72.76	10	1437.4	177.55
20	417.41	15.18	20	924.58	74.12	20	1446.3	179.72
30	425.79	15.80	30	933.13	75.49	30	1455.1	181.89
40	434.17	16.43	40	941.69	76.86	40	1464.0	184.08
50	442.55	17.07	50	950.25	78.26	50	1472.9	186.29
9	450.93	17.72	19	958.81	79.67	29	1481.8	188.51
10	459.32	18.38	10	967.38	81.09	10	1490.7	190.74
20	467.71	19.06	20	975.96	82.53	20	1499.6	192.99
30	476.10	19.75	30	984.53	83.97	30	1508.5	195.25
40	484.49	20.45	40	993.12	85.43	40	1517.4	197.53
50	492.88	21.16	50	1001.7	86.90	50	1526.3	199.82
10	501.28	21.89	20	1010.3	88.39	30	1535.3	202.12
10	509.68	22.62	10	1018.9	89.89	10	1544.2	204.44
20	518.08	23.38	20	1027.5	91.40	20	1553.1	206.77
30	526.48	24.14	30	1036.1	92.92	30	1562.1	209.12
40	534.89	24.91	40	1044.7	94.46	40	1571.0	211.48
50	543.29	25.70	50	1053.3	96.01	50	1580.0	213.86

1238
 1291-91
 1370
 1372
 1374
 1399
 1400
 1401
 1405

ENGINEERING DEPARTMENT,
 CITY OF SAN DIEGO,
 CALIFORNIA.

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

MINUTES.	LKS.	MINUTES.	LKS.	MINUTES.	LKS.
1.....	2 $\frac{1}{2}$	21.....	49	41.....	95 $\frac{1}{2}$
2.....	4 $\frac{1}{2}$	22.....	51 $\frac{1}{2}$	42.....	98
3.....	7	23.....	53 $\frac{1}{2}$	43.....	100 $\frac{1}{2}$
4.....	9 $\frac{1}{2}$	24.....	56	44.....	102 $\frac{1}{2}$
5.....	11 $\frac{1}{2}$	25.....	58 $\frac{1}{2}$	45.....	105
6.....	14	26.....	60 $\frac{1}{2}$	46.....	107 $\frac{1}{2}$
7.....	16 $\frac{1}{2}$	27.....	63	47.....	109 $\frac{1}{2}$
8.....	18 $\frac{1}{2}$	28.....	65 $\frac{1}{2}$	48.....	112
9.....	21	29.....	67 $\frac{1}{2}$	49.....	114 $\frac{1}{2}$
10.....	23 $\frac{1}{2}$	30.....	70	50.....	116 $\frac{1}{2}$
11.....	25 $\frac{1}{2}$	31.....	72 $\frac{1}{2}$	51.....	119
12.....	28	32.....	74 $\frac{1}{2}$	52.....	121 $\frac{1}{2}$
13.....	30 $\frac{1}{2}$	33.....	77	53.....	123 $\frac{1}{2}$
14.....	32 $\frac{1}{2}$	34.....	79 $\frac{1}{2}$	54.....	126
15.....	35	35.....	81 $\frac{1}{2}$	55.....	128 $\frac{1}{2}$
16.....	37 $\frac{1}{2}$	36.....	84	56.....	130 $\frac{1}{2}$
17.....	39 $\frac{1}{2}$	37.....	86 $\frac{1}{2}$	57.....	133
18.....	42	38.....	88 $\frac{1}{2}$	58.....	135 $\frac{1}{2}$
19.....	44 $\frac{1}{2}$	39.....	91	59.....	137 $\frac{1}{2}$
20.....	46 $\frac{1}{2}$	40.....	93 $\frac{1}{2}$	60.....	140

TABLE FOR RUNNING ON SLOPES.

In the following table the first column shows the angle, the second the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS
°		°		°		°	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07

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